

ABSTRACT OF THE DISCLOSURE

An OLED display device includes: an array of light emitting pixels, each pixel having red, green, and blue OLEDs and at least one additional colored OLED that expands the gamut of the display device relative to the gamut defined by the red, green and blue OLEDs, wherein the luminance efficiency or the luminance stability over time of the additional OLED is higher than the luminance efficiency or the luminance stability over time of at least one of the red, green, and blue OLEDs; and means for selectively driving the OLEDs with a drive signal to reduce overall power usage or extend the lifetime of the display while maintaining display color accuracy. In accordance with various embodiments, the present invention provides a color display device with improved power efficiency, longer overall lifetime, expanded color gamut with accurate hues, and improved spatial image quality.